

# Sequence Listing

<110> Baker, Kevin  
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 Goddard, Audrey  
 Godowski, Paul  
 Grimaldi, Christopher  
 Gurney, Austin  
 Hillan, Kenneth  
 Kljavin, Ivar  
 Napier, Mary  
 Roy, Margaret  
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 Wood, William

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gaaaaggaaa atgcaccacg aagccgtcag aggcaacttt ttctgtacc 300  
tgtgaggagc agtacgtggg tactttctgt gaagaatacg atgcttgcca 350  
gaggaaacct tgccaaaaca acgcgagctg tattgatgca aatgaaaagc 400  
aagatgggag caatttcacc tgtgtttgcc ttctgggta tactggagag 450  
ctttgccaac cgaactgaga ttggagcgaa cgacctacac cgaactgaga 500  
taggggag 508

<210> 20  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Oligonucleotide Probe

<400> 20  
ctctggaagg tcacggccac agg 23

<210> 21  
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<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 21  
ctcagttcgg ttggcaaagc tctc 24

<210> 22  
<211> 69  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 22

cagtgtctccc tcatagatgg acgaaagtgt gacccccctt tcaggcgaga 50

gctttgccaa ccgaactga 69

<210> 23

<211> 1520

<212> DNA

<213> Homo Sapien

<400> 23

gctgagtctg ctgtctctgc tgtgtgtgt ccagcctgta acctgtgect 50

acaccacgcc agggcccccc agagccctca ccacgctggg cgccccaga 100

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cagcaccag ggctgcaag agcaggcacg ggccctgatg cgggacttcc 200

cgctcgtgga cggccacaac gacctgcccc tggctctaag gcaggtttac 250

cagaaagggc tacaggatgt taacctgcgc aatttcagct acggccagac 300

cagcctggac aggcttagag atggcctcgt gggcgcccag ttctggtcag 350

cctatgtgcc atgccagacc caggaccggg atgccctgcg cctcacctg 400

gagcagattg acctcatacg ccgcatgtgt gcctcctatt ctgagctgga 450

gcttgtgacc tcggctaaag ctctgaacga cactcagaaa ttggcctgcc 500

tcacgggtgt agaggggtggc cactcgtctg acaatagcct ctccatctta 550

cgtaccttct acatgctggg agtgcgttac ctgacgtca cccacacctg 600

caacacaccc tgggcagaga gctccgctaa gggcgccac tccttctaca 650

acaacatcag cgggctgact gactttggtg agaaggtggt ggcagaaatg 700

aaccgctg gcatgatggt agacttatcc catgtctcag atgctgtggc 750

acggcggggc ctggaagtgt cacaggcacc tgtgatcttc tccactcgg 800

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cagcttctga agaagaacgg tggcgtcgtg atggtgtctt tgtccatggg 900

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tcgaccacat caaggctgtc attggatcca agttcatcgg gattggtgga 1000

gattatgatg gggccggcaa attccctcag gggctggaag acgtgtccac 1050

ataccgggtc ctgatagagg agttgctgag tcgtggctgg agtgaggaag 1100

agcttcaggg tgtccttcgt ggaaacctgc tgcgggtctt cagacaagtg 1150



**SECRET**

<211> 22

<213> Artificial Sequence

<223> Synthetic oligonucleotide probe

<400> 25  
agttctgggc agcctatgtg cc 22

<210> 26  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 26  
cgtgatgggtg tctttgtcca tggg 24

<210> 27  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 27  
ctccaccaat cccgatgaac ttgg 24

<210> 28  
<211> 50  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

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<210> 29  
<211> 1416  
<212> DNA  
<213> Homo Sapien

<400> 29  
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gccctgatgc gggacttccc gctcgtggac ggccacaacg acctgcccct 200  
ggtcctaagg caggtttacc agaaagggt acaggatgtt aacctgcgca 250  
atttcagcta cggccagacc agcctggaca ggcttagaga tggcctcgtg 300  
ggcgcccagt tctggtcagc ctatgtgcc tgcagaccc aggaccggga 350  
tgccctgcgc ctcacctgg agcagattga cctcatagc cgcattgtgtg 400



cctcctattc tgagctggag cttgtgacct cggctaaagc tctgaacgac 450  
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 tccgacctct caggtctgcg tcagagacag agtctgactt caggccagga 1250  
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 cagtctcaga gtctctcccc caccctgaca aaactcacac atgcccaccg 1350  
 tgcccagcac ctgaactcct ggggggaccg tcagtcttcc tcttcccccc 1400  
 aaaaccaag gacacc 1416

<210> 30  
 <211> 446  
 <212> PRT  
 <213> Homo Sapien

<400> 30  
 Met Pro Gly Thr Tyr Ala Pro Ser Thr Thr Leu Ser Ser Pro Ser  
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 20 25 30  
 Pro Leu Val Asp Gly His Asn Asp Leu Pro Leu Val Leu Arg Gln  
 35 40 45  
 Val Tyr Gln Lys Gly Leu Gln Asp Val Asn Leu Arg Asn Phe Ser

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Tyr	Gly	Gln	Thr	Ser	Leu	Asp	Arg	Leu	Arg	Asp	Gly	Leu	Val	Gly
				65					70					75
Ala	Gln	Phe	Trp	Ser	Ala	Tyr	Val	Pro	Cys	Gln	Thr	Gln	Asp	Arg
				80					85					90
Asp	Ala	Leu	Arg	Leu	Thr	Leu	Glu	Gln	Ile	Asp	Leu	Ile	Arg	Arg
				95					100					105
Met	Cys	Ala	Ser	Tyr	Ser	Glu	Leu	Glu	Leu	Val	Thr	Ser	Ala	Lys
				110					115					120
Ala	Leu	Asn	Asp	Thr	Gln	Lys	Leu	Ala	Cys	Leu	Ile	Gly	Val	Glu
				125					130					135
Gly	Gly	His	Ser	Leu	Asp	Asn	Ser	Leu	Ser	Ile	Leu	Arg	Thr	Phe
				140					145					150
Tyr	Met	Leu	Gly	Val	Arg	Tyr	Leu	Thr	Leu	Thr	His	Thr	Cys	Asn
				155					160					165
Thr	Pro	Trp	Ala	Glu	Ser	Ser	Ala	Lys	Gly	Val	His	Ser	Phe	Tyr
				170					175					180
Asn	Asn	Ile	Ser	Gly	Leu	Thr	Asp	Phe	Gly	Glu	Lys	Val	Val	Ala
				185					190					195
Glu	Met	Asn	Arg	Leu	Gly	Met	Met	Val	Asp	Leu	Ser	His	Val	Ser
				200					205					210
Asp	Ala	Val	Ala	Arg	Arg	Ala	Leu	Glu	Val	Ser	Gln	Ala	Pro	Val
				215					220					225
Ile	Phe	Ser	His	Ser	Ala	Ala	Arg	Gly	Val	Cys	Asn	Ser	Ala	Arg
				230					235					240
Asn	Val	Pro	Asp	Asp	Ile	Leu	Gln	Leu	Leu	Lys	Lys	Asn	Gly	Gly
				245					250					255
Val	Val	Met	Val	Ser	Leu	Ser	Met	Gly	Val	Ile	Gln	Cys	Asn	Pro
				260					265					270
Ser	Ala	Asn	Val	Ser	Thr	Val	Ala	Asp	His	Phe	Asp	His	Ile	Lys
				275					280					285
Ala	Val	Ile	Gly	Ser	Lys	Phe	Ile	Gly	Ile	Gly	Gly	Asp	Tyr	Asp
				290					295					300
Gly	Ala	Gly	Lys	Phe	Pro	Gln	Gly	Leu	Glu	Asp	Val	Ser	Thr	Tyr
				305					310					315
Pro	Val	Leu	Ile	Glu	Glu	Leu	Leu	Ser	Arg	Gly	Trp	Ser	Glu	Glu
				320					325					330
Glu	Leu	Gln	Gly	Val	Leu	Arg	Gly	Asn	Leu	Leu	Arg	Val	Phe	Arg
				335					340					345

Gln	Val	Glu	Lys	Val	Gln	Glu	Glu	Asn	Lys	Trp	Gln	Ser	Pro	Leu
				350					355					360
Glu	Asp	Lys	Phe	Pro	Asp	Glu	Gln	Leu	Ser	Ser	Ser	Cys	His	Ser
				365					370					375
Asp	Leu	Ser	Arg	Leu	Arg	Gln	Arg	Gln	Ser	Leu	Thr	Ser	Gly	Gln
				380					385					390
Glu	Leu	Thr	Glu	Ile	Pro	Ile	His	Trp	Thr	Ala	Lys	Leu	Pro	Ala
				395					400					405
Lys	Trp	Ser	Val	Ser	Glu	Ser	Ser	Pro	His	Pro	Asp	Lys	Thr	His
				410					415					420
Thr	Cys	Pro	Pro	Cys	Pro	Ala	Pro	Glu	Leu	Leu	Gly	Gly	Pro	Ser
				425					430					435
Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro	Lys	Asp	Thr				
				440					445					

<210> 31  
 <211> 1790  
 <212> DNA  
 <213> Homo Sapien

<400> 31  
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 cccggcagcg ccggccccat gcccgccggc cgccggggcc ccgcccacca 150  
 atccgcgcgg cgcccgccgc cgttgctgcc cctgctgctg ctgctctgcg 200  
 tctcgggggc gccgcgagcc ggatcaggag cccacacagc tgtgatcagt 250  
 ccccaggatc ccacgcttct catcggtcc tccctgctgg ccacctgctc 300  
 agtgcacgga gaccaccag gagccaccgc cgagggcctc tactggacct 350  
 tcaacggggc ccgctgccc cctgagctct cccgtgtact caacgcctcc 400  
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 ggacaacctc gtgtgccacg cccgtgacgg cagcatcctg gctggctcct 500  
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 atggccagga caacacatgt gaggagtacc acacagtggg gcccactcc 700  
 tgccacatcc ccaaggacct ggctctcttt acgccctatg agatctgggt 750  
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 cattactccc cattacctag ggcccctcca aaagagtcct tttaaataaa 1700  
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 aaaaaaaaaa aaaaaaaaaa aaaaacaaaa aaaaaaaaaa 1790

<210> 32

<211> 422

<212> PRT

<213> Homo Sapien

<400> 32

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			20					25					30	
Ala	Pro	Arg	Ala	Gly	Ser	Gly	Ala	His	Thr	Ala	Val	Ile	Ser	Pro
			35					40					45	
Gln	Asp	Pro	Thr	Leu	Leu	Ile	Gly	Ser	Ser	Leu	Leu	Ala	Thr	Cys
			50					55					60	

Ser	Val	His	Gly	Asp	Pro	Pro	Gly	Ala	Thr	Ala	Glu	Gly	Leu	Tyr		65	70	75
Trp	Thr	Leu	Asn	Gly	Arg	Arg	Leu	Pro	Pro	Glu	Leu	Ser	Arg	Val		80	85	90
Leu	Asn	Ala	Ser	Thr	Leu	Ala	Leu	Ala	Leu	Ala	Asn	Leu	Asn	Gly		95	100	105
Ser	Arg	Gln	Arg	Ser	Gly	Asp	Asn	Leu	Val	Cys	His	Ala	Arg	Asp		110	115	120
Gly	Ser	Ile	Leu	Ala	Gly	Ser	Cys	Leu	Tyr	Val	Gly	Leu	Pro	Pro		125	130	135
Glu	Lys	Pro	Val	Asn	Ile	Ser	Cys	Trp	Ser	Lys	Asn	Met	Lys	Asp		140	145	150
Leu	Thr	Cys	Arg	Trp	Thr	Pro	Gly	Ala	His	Gly	Glu	Thr	Phe	Leu		155	160	165
His	Thr	Asn	Tyr	Ser	Leu	Lys	Tyr	Lys	Leu	Arg	Trp	Tyr	Gly	Gln		170	175	180
Asp	Asn	Thr	Cys	Glu	Glu	Tyr	His	Thr	Val	Gly	Pro	His	Ser	Cys		185	190	195
His	Ile	Pro	Lys	Asp	Leu	Ala	Leu	Phe	Thr	Pro	Tyr	Glu	Ile	Trp		200	205	210
Val	Glu	Ala	Thr	Asn	Arg	Leu	Gly	Ser	Ala	Arg	Ser	Asp	Val	Leu		215	220	225
Thr	Leu	Asp	Ile	Leu	Asp	Val	Val	Thr	Thr	Asp	Pro	Pro	Pro	Asp		230	235	240
Val	His	Val	Ser	Arg	Val	Gly	Gly	Leu	Glu	Asp	Gln	Leu	Ser	Val		245	250	255
Arg	Trp	Val	Ser	Pro	Pro	Ala	Leu	Lys	Asp	Phe	Leu	Phe	Gln	Ala		260	265	270
Lys	Tyr	Gln	Ile	Arg	Tyr	Arg	Val	Glu	Asp	Ser	Val	Asp	Trp	Lys		275	280	285
Val	Val	Asp	Asp	Val	Ser	Asn	Gln	Thr	Ser	Cys	Arg	Leu	Ala	Gly		290	295	300
Leu	Lys	Pro	Gly	Thr	Val	Tyr	Phe	Val	Gln	Val	Arg	Cys	Asn	Pro		305	310	315
Phe	Gly	Ile	Tyr	Gly	Ser	Lys	Lys	Ala	Gly	Ile	Trp	Ser	Glu	Trp		320	325	330
Ser	His	Pro	Thr	Ala	Ala	Ser	Thr	Pro	Arg	Ser	Glu	Arg	Pro	Gly		335	340	345
Pro	Gly	Gly	Gly	Ala	Cys	Glu	Pro	Arg	Gly	Gly	Glu	Pro	Ser	Ser				

	350		355		360									
Gly	Pro	Val	Arg	Arg	Glu	Leu	Lys	Gln	Phe	Leu	Gly	Trp	Leu	Lys
				365					370					375
Lys	His	Ala	Tyr	Cys	Ser	Asn	Leu	Ser	Phe	Arg	Leu	Tyr	Asp	Gln
				380					385					390
Trp	Arg	Ala	Trp	Met	Gln	Lys	Ser	His	Lys	Thr	Arg	Asn	Gln	Asp
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Glu	Gly	Ile	Leu	Pro	Ser	Gly	Arg	Arg	Gly	Thr	Ala	Arg	Gly	Pro
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Ala Arg

<210> 33  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 33  
 cccgcccgcac gtgcacgtga gcc 23

<210> 34  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 34  
 tgagccagcc caggaactgc ttg 23

<210> 35  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 35  
 caagtgcgct gcaaccctt tggcatctat ggctccaaga aagccgggat 50

<210> 36  
 <211> 1771  
 <212> DNA  
 <213> Homo Sapien

<400> 36  
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agtggtaaaa aaaaaaaaaa acacaccaaa cgctcgcagc cacaaaaggg 100  
 atgaaatttc ttctggacat cctcctgctt ctcccgttac tgatcgtctg 150  
 ctccctagag tccttcgtga agctttttat tcctaagagg agaaaatcag 200  
 tcaccggcga aatcgtgctg attacaggag ctgggcatgg aattgggaga 250  
 ctgactgcct atgaatttgc taaacttaaa agcaagctgg ttctctggga 300  
 tataaataag catggactgg aggaaacagc tgccaaatgc aagggactgg 350  
 gtgccaaggt tcataccttt gtggtagact gcagcaaccg agaagatatt 400  
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 cccattttct tcaatatcat ttttgaggct ttggcagtct tcatttacta 1150  
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 tacctttaga ggtgacttta aggaaaatga agaaaaagaa ccaaatgac 1250  
 tttattaaaa taatttccaa gattatttgt ggctcacctg aaggctttgc 1300  
 aaaatttgta ccataaccgt ttatttaaca tatattttta tttttgattg 1350  
 cacttaaat ttgtataatt tgtgtttctt tttctgttct acataaaatc 1400  
 agaaacttca agctctctaa ataaaatgaa ggactatata tagtgggtatt 1450  
 tcacaatgaa tatcatgaac tctcaatggg taggtttcat cctaccatt 1500





200	205	210
Val Lys Thr Thr Cys Leu Cys Pro Asn Phe Val Asn Thr Gly Phe 215	220	225
Ile Lys Asn Pro Ser Thr Ser Leu Gly Pro Thr Leu Glu Pro Glu 230	235	240
Glu Val Val Asn Arg Leu Met His Gly Ile Leu Thr Glu Gln Lys 245	250	255
Met Ile Phe Ile Pro Ser Ser Ile Ala Phe Leu Thr Thr Leu Glu 260	265	270
Arg Ile Leu Pro Glu Arg Phe Leu Ala Val Leu Lys Arg Lys Ile 275	280	285
Ser Val Lys Phe Asp Ala Val Ile Gly Tyr Lys Met Lys Ala Gln 290	295	300

<210> 38  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 38  
 ggtgaaggca gaaattggag atg 23

<210> 39  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 39  
 atcccatgca tcagcctgtt tacc 24

<210> 40  
 <211> 48  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 40  
 gctggtgtag tctatacatc agatttggtt gctacacaag atcctcag 48

<210> 41  
 <211> 1377  
 <212> DNA  
 <213> Homo Sapien

**06-07-2018**

<210> 42

**BIOGRAPHICAL DATA**



<220>

<223> Synthetic oligonucleotide probe

ggagcaccac caactggagg gtccggagta gcgagcgcgc cgaag 45

<211> 1876

<213> Homo Sapien

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acctgacggg cccaacagac ccatgctgca tccagagacc tcccctggcc 150

gggggcatct cctggctgtg ctctggccc tccttggcac cacctgggca 200

gaggtgtggc caccacagct gcaggagcag gctccgatgg ccggaqccct 250

gaacaggaag gagagtttct tgctcctctc cctgcacaac cgcttgcgca 300

gctgggtcca gccccctgcg gctgacatgc ggaggctgga ctggagtgc 350

agcctggccc aactggctca agccagggca gccctctgtg gaatcccaac 400

cccgagcctg gcatccggcc tgtggcgcac cctgcaagtg ggctggaaca 450

tgcagctgct gccgcgggc ttggcgtcct ttgttgaagt ggtcagccta 500

tggtttgcag aggggcagcg gtacagccac qcqgcaggag agtqtgctcg 550

caacgccacc tgcacccact acacgcagct cgtgtgggcc acctcaagcc 600

agctgggctg tgggcggcac ctgtgctctg caqgccagac aqcqataqaa 650

gcctttgtct gtgcctactc ccccggaagg aactgggagg tcaacgggaa 700

gacaatcatc ccctataaga aggggtgcctg gtgttcgctc tgcacagcca 750

gtgtctcagg ctgcttcaaa gcctgggacc atgcaggggg gctctgtgag 800

gtccccagga atccttgtcg catgagctgc caqaaccatg gacgtctcaa 850

catcagcacc tgccactgcc actgtccccc tggctacacg ggcagatact 900

gccaagtgag gtgcagcctg cagtgtgtgc acqgccqgtt ccqqaqqaq 950

gagtgcctcgt gcgtctgtga catcggctac qggggaqccc aqtgtaccac 1000

caaggtgcat ttcccttcc acacctgtga cctgaggatc gacggagact 1050

gcttcattggt gtcttcagag gcagacacct attacagagc caggatgaaa 1100

tgtcagagga aagqcqqqqt qctqcccaq atcaagaqcc aqaaaqtqca 1150

ggacatcctc gccttctatc tgggccgcct ggagaccacc aacgaggtga 1200  
ctgacagtga cttcgagacc aggaacttct ggatcgggct cacctacaag 1250  
accgccaagg actccttccg ctgggccaca ggggagcacc aggccttcac 1300  
cagttttgcc tttgggcagc ctgacaacca cgggctggtg tggctgagtg 1350  
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gcctgctttt gattgggaag atgggcttca attagatggc gaaggagagg 1750  
acaccgccag tggccaaaa aggtgctct cttccacctg gccagaccc 1800  
tgtggggcag cggagcttcc ctgtggcatg aacccacgg ggtattaaat 1850  
tatgaatcag ctgaaaaaaaa aaaaaa 1876

<210> 50  
<211> 455  
<212> PRT  
<213> Homo Sapien

<400> 50  
Met Leu His Pro Glu Thr Ser Pro Gly Arg Gly His Leu Leu Ala  
1 5 10 15  
Val Leu Leu Ala Leu Leu Gly Thr Thr Trp Ala Glu Val Trp Pro  
20 25 30  
Pro Gln Leu Gln Glu Gln Ala Pro Met Ala Gly Ala Leu Asn Arg  
35 40 45  
Lys Glu Ser Phe Leu Leu Leu Ser Leu His Asn Arg Leu Arg Ser  
50 55 60  
Trp Val Gln Pro Pro Ala Ala Asp Met Arg Arg Leu Asp Trp Ser  
65 70 75  
Asp Ser Leu Ala Gln Leu Ala Gln Ala Arg Ala Ala Leu Cys Gly  
80 85 90  
Ile Pro Thr Pro Ser Leu Ala Ser Gly Leu Trp Arg Thr Leu Gln  
95 100 105  
Val Gly Trp Asn Met Gln Leu Leu Pro Ala Gly Leu Ala Ser Phe

	110		115		120
Val Glu Val Val	Ser Leu Trp Phe Ala	Glu Gly Gln Arg Tyr	Ser		
	125		130		135
His Ala Ala Gly	Glu Cys Ala Arg Asn	Ala Thr Cys Thr His	Tyr		
	140		145		150
Thr Gln Leu Val	Trp Ala Thr Ser Ser	Gln Leu Gly Cys Gly	Arg		
	155		160		165
His Leu Cys Ser	Ala Gly Gln Thr Ala	Ile Glu Ala Phe Val	Cys		
	170		175		180
Ala Tyr Ser Pro	Gly Gly Asn Trp Glu	Val Asn Gly Lys Thr	Ile		
	185		190		195
Ile Pro Tyr Lys	Lys Gly Ala Trp Cys	Ser Leu Cys Thr Ala	Ser		
	200		205		210
Val Ser Gly Cys	Phe Lys Ala Trp Asp	His Ala Gly Gly Leu	Cys		
	215		220		225
Glu Val Pro Arg	Asn Pro Cys Arg Met	Ser Cys Gln Asn His	Gly		
	230		235		240
Arg Leu Asn Ile	Ser Thr Cys His Cys	His Cys Pro Pro Gly	Tyr		
	245		250		255
Thr Gly Arg Tyr	Cys Gln Val Arg Cys	Ser Leu Gln Cys Val	His		
	260		265		270
Gly Arg Phe Arg	Glu Glu Glu Cys Ser	Cys Val Cys Asp Ile	Gly		
	275		280		285
Tyr Gly Gly Ala	Gln Cys Ala Thr Lys	Val His Phe Pro Phe	His		
	290		295		300
Thr Cys Asp Leu	Arg Ile Asp Gly Asp	Cys Phe Met Val Ser	Ser		
	305		310		315
Glu Ala Asp Thr	Tyr Tyr Arg Ala Arg	Met Lys Cys Gln Arg	Lys		
	320		325		330
Gly Gly Val Leu	Ala Gln Ile Lys Ser	Gln Lys Val Gln Asp	Ile		
	335		340		345
Leu Ala Phe Tyr	Leu Gly Arg Leu Glu	Thr Thr Asn Glu Val	Thr		
	350		355		360
Asp Ser Asp Phe	Glu Thr Arg Asn Phe	Trp Ile Gly Leu Thr	Tyr		
	365		370		375
Lys Thr Ala Lys	Asp Ser Phe Arg Trp	Ala Thr Gly Glu His	Gln		
	380		385		390
Ala Phe Thr Ser	Phe Ala Phe Gly Gln	Pro Asp Asn His Gly	Leu		
	395		400		405

Val Trp Leu Ser Ala Ala Met Gly Phe Gly Asn Cys Val Glu Leu  
410 415 420

Gln Ala Ser Ala Ala Phe Asn Trp Asn Asp Gln Arg Cys Lys Thr  
425 430 435

Arg Asn Arg Tyr Ile Cys Gln Phe Ala Gln Glu His Ile Ser Arg  
440 445 450

Trp Gly Pro Gly Ser  
455

<210> 51  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 51  
aggaacttct ggatcgggct cacc 24

<210> 52  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 52  
gggtctgggc caggtggaag agag 24

<210> 53  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 53  
gccaaggact ccttcgctg ggccacaggg gagcaccagg ccttc 45

<210> 54  
<211> 2331  
<212> DNA  
<213> Homo Sapien

<400> 54  
cggacgcgtg ggctgggcgc tgcaaagcgt gtcccgcggg gtccccgagc 50

gtcccgcgcc ctgcgccgc catgctcctg ctgctggggc tgtgcctggg 100

gctgtccctg tgtgtggggt cgcaggaaga ggcgcagagc tggggccact 150

cttcggagca ggatggactc agggccccga ggcaagtcag actgttgcag 200



aggctgaaaa ccaaacccttt gatgacagaa ttctcagtga agtctaccat 250  
catttcccgt tatgccttca ctacgggtttc ctgcagaatg ctgaacagag 300  
cttctgaaga ccaggacatt gagttccaga tgcagattcc agctgcagct 350  
ttcatcacca acttcactat gcttattgga gacaagggtgt atcagggcga 400  
aattacagag agagaaaaga agagtgggtga tagggtaaaa gagaaaagga 450  
ataaaaccac agaagaaaat ggagagaagg ggactgaaat attcagagct 500  
tctgcagtga ttcccagcaa ggacaaagcc gcctttttcc tgagttatga 550  
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agcgcgggca tgcctccct ggaggtgctg ccgcttcaca acagcaggca 700  
gaggggcagt gggcgggggg aagatgattc tgggcctccc ccatctactg 750  
tcattaacca aaatgaaaca ttgccaaca taatttttaa acctactgta 800  
gtacaacaag ccaggattgc ccagaatgga attttgggag actttatcat 850  
tagatatgac gtcaatagag aacagagcat tggggacatc caggttctaa 900  
atggctatct tgtgcactac ttgtctcta aagaccttc tcttttacc 950  
aagaatgtgg tattcgtgct tgacagcagt gcttctatgg tgggaaccaa 1000  
actccggcag accaaggatg ccctcttcac aattctccat gacctccgac 1050  
cccaggaccg tttcagtatc attggatttt ccaaccggat caaagtatgg 1100  
aaggaccact tgatatcagt cactccagac agcatcaggg atgggaaagt 1150  
gtacattcac catatgtcac ccactggagg cacagacatc aacggggccc 1200  
tgcagagggc catcaggctc ctcaacaagt acgtggccca cagtggcatt 1250  
ggagaccgga gcgtgtccct catcgtcttc ctgacggatg ggaagccac 1300  
ggtcggggag acgcacaccc tcaagatcct caacaacacc cgagaggccg 1350  
cccagggcca agtctgcac ttaccattg gcacggcaa cgacgtggac 1400  
ttcaggctgc tggagaaact gtcgtggag aactgtggcc tcacacggcg 1450  
cgtgcacgag gaggaggacg caggctcgca gctcatcggg ttctacgatg 1500  
aaatcaggac cccgtctctc tctgacatcc gcacgatta tccccacg 1550  
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ggagatcatc attgcgggga agctgggtgga caggaagctg gatcacctgc 1650

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 ggagctacct caccacaaaag gagctgctga gctcctggct gcaaagtgaac 1850  
 gatgaaccgg agaaggagcg gctgcggcag cgggcccagg ccctggctgt 1900  
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 tcccacgcat ggatggcctg gaggaggccc acggcatgtc ggctgccatg 2000  
 ggacccgaac cggtggtgca gagcgtgcga ggagctggca cgcagccagg 2050  
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 aaaaaagaca tgggagagat ggtgtttttc ctctccacca cctggggata 2150  
 cgatgagaag atggccacct gcaagccagg aagacggccc tcaccagaca 2200  
 ccatgtctgc tggcaccttg atcttggacc tcccagcctc cagaactgtg 2250  
 agaaataaat gtgttttgtt taagctaaaa aaaaaaaaaa aaaaaaaaaa 2300  
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa a 2331

<210> 55  
 <211> 694  
 <212> PRT  
 <213> Homo Sapien

<400> 55  
 Met Leu Leu Leu Leu Gly Leu Cys Leu Gly Leu Ser Leu Cys Val  
 1 5 10 15  
 Gly Ser Gln Glu Glu Ala Gln Ser Trp Gly His Ser Ser Glu Gln  
 20 25 30  
 Asp Gly Leu Arg Val Pro Arg Gln Val Arg Leu Leu Gln Arg Leu  
 35 40 45  
 Lys Thr Lys Pro Leu Met Thr Glu Phe Ser Val Lys Ser Thr Ile  
 50 55 60  
 Ile Ser Arg Tyr Ala Phe Thr Thr Val Ser Cys Arg Met Leu Asn  
 65 70 75  
 Arg Ala Ser Glu Asp Gln Asp Ile Glu Phe Gln Met Gln Ile Pro  
 80 85 90  
 Ala Ala Ala Phe Ile Thr Asn Phe Thr Met Leu Ile Gly Asp Lys  
 95 100 105  
 Val Tyr Gln Gly Glu Ile Thr Glu Arg Glu Lys Lys Ser Gly Asp  
 110 115 120

Arg	Val	Lys	Glu	Lys 125	Arg	Asn	Lys	Thr	Thr 130	Glu	Glu	Asn	Gly	Glu 135
Lys	Gly	Thr	Glu	Ile 140	Phe	Arg	Ala	Ser	Ala 145	Val	Ile	Pro	Ser	Lys 150
Asp	Lys	Ala	Ala	Phe 155	Phe	Leu	Ser	Tyr	Glu 160	Glu	Leu	Leu	Gln	Arg 165
Arg	Leu	Gly	Lys	Tyr 170	Glu	His	Ser	Ile	Ser 175	Val	Arg	Pro	Gln	Gln 180
Leu	Ser	Gly	Arg	Leu 185	Ser	Val	Asp	Val	Asn 190	Ile	Leu	Glu	Ser	Ala 195
Gly	Ile	Ala	Ser	Leu 200	Glu	Val	Leu	Pro	Leu 205	His	Asn	Ser	Arg	Gln 210
Arg	Gly	Ser	Gly	Arg 215	Gly	Glu	Asp	Asp	Ser 220	Gly	Pro	Pro	Pro	Ser 225
Thr	Val	Ile	Asn	Gln 230	Asn	Glu	Thr	Phe	Ala 235	Asn	Ile	Ile	Phe	Lys 240
Pro	Thr	Val	Val	Gln 245	Gln	Ala	Arg	Ile	Ala 250	Gln	Asn	Gly	Ile	Leu 255
Gly	Asp	Phe	Ile	Ile 260	Arg	Tyr	Asp	Val	Asn 265	Arg	Glu	Gln	Ser	Ile 270
Gly	Asp	Ile	Gln	Val 275	Leu	Asn	Gly	Tyr	Phe 280	Val	His	Tyr	Phe	Ala 285
Pro	Lys	Asp	Leu	Pro 290	Pro	Leu	Pro	Lys	Asn 295	Val	Val	Phe	Val	Leu 300
Asp	Ser	Ser	Ala	Ser 305	Met	Val	Gly	Thr	Lys 310	Leu	Arg	Gln	Thr	Lys 315
Asp	Ala	Leu	Phe	Thr 320	Ile	Leu	His	Asp	Leu 325	Arg	Pro	Gln	Asp	Arg 330
Phe	Ser	Ile	Ile	Gly 335	Phe	Ser	Asn	Arg	Ile 340	Lys	Val	Trp	Lys	Asp 345
His	Leu	Ile	Ser	Val 350	Thr	Pro	Asp	Ser	Ile 355	Arg	Asp	Gly	Lys	Val 360
Tyr	Ile	His	His	Met 365	Ser	Pro	Thr	Gly	Gly 370	Thr	Asp	Ile	Asn	Gly 375
Ala	Leu	Gln	Arg	Ala 380	Ile	Arg	Leu	Leu	Asn 385	Lys	Tyr	Val	Ala	His 390
Ser	Gly	Ile	Gly	Asp 395	Arg	Ser	Val	Ser	Leu 400	Ile	Val	Phe	Leu	Thr 405
Asp	Gly	Lys	Pro	Thr	Val	Gly	Glu	Thr	His	Thr	Leu	Lys	Ile	Leu

410	415	420
Asn Asn Thr Arg Glu Ala Ala Arg Gly Gln Val Cys Ile Phe Thr		
425	430	435
Ile Gly Ile Gly Asn Asp Val Asp Phe Arg Leu Leu Glu Lys Leu		
440	445	450
Ser Leu Glu Asn Cys Gly Leu Thr Arg Arg Val His Glu Glu Glu		
455	460	465
Asp Ala Gly Ser Gln Leu Ile Gly Phe Tyr Asp Glu Ile Arg Thr		
470	475	480
Pro Leu Leu Ser Asp Ile Arg Ile Asp Tyr Pro Pro Ser Ser Val		
485	490	495
Val Gln Ala Thr Lys Thr Leu Phe Pro Asn Tyr Phe Asn Gly Ser		
500	505	510
Glu Ile Ile Ile Ala Gly Lys Leu Val Asp Arg Lys Leu Asp His		
515	520	525
Leu His Val Glu Val Thr Ala Ser Asn Ser Lys Lys Phe Ile Ile		
530	535	540
Leu Lys Thr Asp Val Pro Val Arg Pro Gln Lys Ala Gly Lys Asp		
545	550	555
Val Thr Gly Ser Pro Arg Pro Gly Gly Asp Gly Glu Gly Asp Thr		
560	565	570
Asn His Ile Glu Arg Leu Trp Ser Tyr Leu Thr Thr Lys Glu Leu		
575	580	585
Leu Ser Ser Trp Leu Gln Ser Asp Asp Glu Pro Glu Lys Glu Arg		
590	595	600
Leu Arg Gln Arg Ala Gln Ala Leu Ala Val Ser Tyr Arg Phe Leu		
605	610	615
Thr Pro Phe Thr Ser Met Lys Leu Arg Gly Pro Val Pro Arg Met		
620	625	630
Asp Gly Leu Glu Glu Ala His Gly Met Ser Ala Ala Met Gly Pro		
635	640	645
Glu Pro Val Val Gln Ser Val Arg Gly Ala Gly Thr Gln Pro Gly		
650	655	660
Pro Leu Leu Lys Lys Pro Asn Ser Val Lys Lys Lys Gln Asn Lys		
665	670	675
Thr Lys Lys Arg His Gly Arg Asp Gly Val Phe Pro Leu His His		
680	685	690
Leu Gly Ile Arg		

<210> 56  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 56  
 gtgggaacca aactccggca gacc 24

<210> 57  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 57  
 cacatcgagc gtctctgg 18

<210> 58  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 58  
 agccgctcct tctccggttc atcg 24

<210> 59  
 <211> 48  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 59  
 tggaaggacc acttgatata agtcactcca gacagcatca gggatggg 48

<210> 60  
 <211> 1413  
 <212> DNA  
 <213> Homo Sapien

<400> 60  
 cggacgcgtg ggggtgccga catggcgagt gtagtgctgc cgagcggatc 50  
 ccagtgtgcg gcggcagcgg cggcggcggc gcctcccggg ctccggcttc 100  
 tgctgttgct cttctccgcc gcggcactga tccccacagg tgatgggcag 150  
 aatctgttta cgaaagacgt gacagtgatc gagggagagg ttgcgaccat 200

seq 6444550

cagttgccaa gtcaataaga gtgacgactc tgtgattcag ctactgaatc 250  
ccaacaggca gaccatttat ttcagggact tcaggccttt gaaggacagc 300  
aggtttcagt tgctgaattt ttctagcagt gaactcaaag tatcattgac 350  
aaacgtctca atttctgatg aaggaagata cttttgccag ctctataaccg 400  
atccccccaca ggaaagtac accaccatca cagtcctgggt cccaccacgt 450  
aatctgatga tcgatatcca gaaagacact gcggtggaag gtgaggagat 500  
tgaagtcaac tgcactgcta tggccagcaa gccagccacg actatcaggt 550  
ggttcaaagg gaacacagag ctaaaaggca aatcggaggt ggaagagtgg 600  
tcagacatgt aactgtgac cagtcagctg atgctgaagg tgcacaagga 650  
ggacgatggg gtcccagtga tctgccaggt ggagcaccct gcggtcactg 700  
gaaacctgca gaccagcgg tatctagaag tacagtataa gcctcaagtg 750  
cacattcaga tgacttatcc tctacaaggc ttaacccggg aaggggacgc 800  
gcttgagtta acatgtgaag ccatcgggaa gcccagcct gtgatggtaa 850  
cttgggtgag agtcgatgat gaaatgcctc aacacgccgt actgtctggg 900  
cccaacctgt tcatcaataa cctaaacaaa acagataatg gtacataaccg 950  
ctgtgaagct tcaaacatag tggggaaagc tcaactcgat tatatgctgt 1000  
atgtatacga tccccccaca actatccctc ctcccacaac aaccaccacc 1050  
accaccacca ccaccaccac caccatcctt accatcatca cagattccccg 1100  
agcaggtgaa gaaggctcga tcagggcagt ggatcatgcc gtgatcggtg 1150  
gcgtcgtggc ggtgggtggg ttcgccatgc tgtgcttgct catcattctg 1200  
gggcgtatt ttgccagaca taaaggtaca tacttcactc atgaagccaa 1250  
aggagccgat gacgcagcag acgcagacac agctataatc aatgcagaag 1300  
gaggacagaa caactccgaa gaaaagaaag agtacttcat ctagatcagc 1350  
ctttttgttt caatgaggtg tccaactggc cctattttaga tgataaagag 1400  
acagtgatat tgg 1413

<210> 61  
<211> 440  
<212> PRT  
<213> Homo Sapien

<400> 61  
Met Ala Ser Val Val Leu Pro Ser Gly Ser Gln Cys Ala Ala Ala  
1 5 10 15

Ala	Ala	Ala	Ala	Ala	Pro	Pro	Gly	Leu	Arg	Leu	Leu	Leu	Leu	Leu	Leu	
				20					25						30	
Phe	Ser	Ala	Ala	Ala	Leu	Ile	Pro	Thr	Gly	Asp	Gly	Gln	Asn	Leu		
				35					40						45	
Phe	Thr	Lys	Asp	Val	Thr	Val	Ile	Glu	Gly	Glu	Val	Ala	Thr	Ile		
				50					55						60	
Ser	Cys	Gln	Val	Asn	Lys	Ser	Asp	Asp	Ser	Val	Ile	Gln	Leu	Leu		
				65					70						75	
Asn	Pro	Asn	Arg	Gln	Thr	Ile	Tyr	Phe	Arg	Asp	Phe	Arg	Pro	Leu		
				80					85						90	
Lys	Asp	Ser	Arg	Phe	Gln	Leu	Leu	Asn	Phe	Ser	Ser	Ser	Glu	Leu		
				95					100						105	
Lys	Val	Ser	Leu	Thr	Asn	Val	Ser	Ile	Ser	Asp	Glu	Gly	Arg	Tyr		
				110					115						120	
Phe	Cys	Gln	Leu	Tyr	Thr	Asp	Pro	Pro	Gln	Glu	Ser	Tyr	Thr	Thr		
				125					130						135	
Ile	Thr	Val	Leu	Val	Pro	Pro	Arg	Asn	Leu	Met	Ile	Asp	Ile	Gln		
				140					145						150	
Lys	Asp	Thr	Ala	Val	Glu	Gly	Glu	Glu	Ile	Glu	Val	Asn	Cys	Thr		
				155					160						165	
Ala	Met	Ala	Ser	Lys	Pro	Ala	Thr	Thr	Ile	Arg	Trp	Phe	Lys	Gly		
				170					175						180	
Asn	Thr	Glu	Leu	Lys	Gly	Lys	Ser	Glu	Val	Glu	Glu	Trp	Ser	Asp		
				185					190						195	
Met	Tyr	Thr	Val	Thr	Ser	Gln	Leu	Met	Leu	Lys	Val	His	Lys	Glu		
				200					205						210	
Asp	Asp	Gly	Val	Pro	Val	Ile	Cys	Gln	Val	Glu	His	Pro	Ala	Val		
				215					220						225	
Thr	Gly	Asn	Leu	Gln	Thr	Gln	Arg	Tyr	Leu	Glu	Val	Gln	Tyr	Lys		
				230					235						240	
Pro	Gln	Val	His	Ile	Gln	Met	Thr	Tyr	Pro	Leu	Gln	Gly	Leu	Thr		
				245					250						255	
Arg	Glu	Gly	Asp	Ala	Leu	Glu	Leu	Thr	Cys	Glu	Ala	Ile	Gly	Lys		
				260					265						270	
Pro	Gln	Pro	Val	Met	Val	Thr	Trp	Val	Arg	Val	Asp	Asp	Glu	Met		
				275					280						285	
Pro	Gln	His	Ala	Val	Leu	Ser	Gly	Pro	Asn	Leu	Phe	Ile	Asn	Asn		
				290					295						300	
Leu	Asn	Lys	Thr	Asp	Asn	Gly	Thr	Tyr	Arg	Cys	Glu	Ala	Ser	Asn		





<400> 64  
atcatcacag attccccgagc 20

<210> 65  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 65  
ttcaatctcc tcaccttcca ccgc 24

<210> 66  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 66  
atagctgtgt ctgcgtctgc tgcg 24

<210> 67  
<211> 50  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 67  
cgcggcactg atccccacag gtgatgggca gaatctgttt acgaaagacg 50

<210> 68  
<211> 2555  
<212> DNA  
<213> Homo Sapien

<400> 68  
ggggcggtg gacgcggact cgaacgcagt tgcttcggga cccaggaccc 50  
cctcgggccc gacccgccag gaaagactga ggccgcggcc tgccccgcc 100  
ggctccctgc gccgccgcc cctcccggga cagaagatgt gctccagggt 150  
ccctctgctg ctgccgtgc tcctgtact ggccctgggg cctgggggtgc 200  
agggctgccc atccggctgc cagtgcagcc agccacagac agtcttctgc 250  
actgcccgcc aggggaccac ggtgccccga gacgtgccac ccgacacggt 300  
ggggctgtac gtctttgaga acggcatcac catgctcgac gcaagcagct 350  
ttgccggcct gccgggcctg cagctcctgg acctgtcaca gaaccagatc 400

gccagcctgc gcctgccccg cctgctgctg ctggacctca gccacaacag 450  
 cctcctggcc ctggagccccg gcatcctgga cactgccaac gtggaggcgc 500  
 tgcggctggc tggctctggg ctgcagcagc tggacgaggg gctcttcagc 550  
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 ccggcaacac ccgcattgcc cagctgcggc ccgaggacct ggccggcctg 700  
 gctgccctgc aggagctgga tgtgagcaac ctaagcctgc aggccctgcc 750  
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 gcaacccctt caactgcgtg tgccccctga gctggtttg cccctgggtg 850  
 cgcgagagcc acgtcacact ggccagccct gaggagacgc gctgccactt 900  
 cccgcccagg aacgctggcc ggctgctcct ggagcttgac tacgccgact 950  
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 cttgtgcccc gaaggcttca cgggcctgta ctgtgagagc cagatggggc 1250  
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gaaagagcag agggagagcg ggtaggcggc tgtgtgactc tagtcttggc 2350  
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catgttttgc ttttttaaaa tatatatata tttataagag atcctttccc 2450  
atattattctg ggaagatgtt tttcaaactc agagacaagg actttggttt 2500  
ttgtaagaca aacgatgata tgaaggcctt ttgtaagaaa aaataaaaaa 2550  
aaaaa 2555

<210> 69  
<211> 598  
<212> PRT  
<213> Homo Sapien

<400> 69  
Met Cys Ser Arg Val Pro Leu Leu Leu Pro Leu Leu Leu Leu Leu  
1 5 10 15  
Ala Leu Gly Pro Gly Val Gln Gly Cys Pro Ser Gly Cys Gln Cys  
20 25 30  
Ser Gln Pro Gln Thr Val Phe Cys Thr Ala Arg Gln Gly Thr Thr  
35 40 45  
Val Pro Arg Asp Val Pro Pro Asp Thr Val Gly Leu Tyr Val Phe  
50 55 60  
Glu Asn Gly Ile Thr Met Leu Asp Ala Ser Ser Phe Ala Gly Leu  
65 70 75  
Pro Gly Leu Gln Leu Leu Asp Leu Ser Gln Asn Gln Ile Ala Ser  
80 85 90  
Leu Arg Leu Pro Arg Leu Leu Leu Leu Asp Leu Ser His Asn Ser  
95 100 105  
Leu Leu Ala Leu Glu Pro Gly Ile Leu Asp Thr Ala Asn Val Glu

				110					115					120
Ala	Leu	Arg	Leu	Ala 125	Gly	Leu	Gly	Leu	Gln 130	Gln	Leu	Asp	Glu	Gly 135
Leu	Phe	Ser	Arg	Leu 140	Arg	Asn	Leu	His	Asp 145	Leu	Asp	Val	Ser	Asp 150
Asn	Gln	Leu	Glu	Arg 155	Val	Pro	Pro	Val	Ile 160	Arg	Gly	Leu	Arg	Gly 165
Leu	Thr	Arg	Leu	Arg 170	Leu	Ala	Gly	Asn	Thr 175	Arg	Ile	Ala	Gln	Leu 180
Arg	Pro	Glu	Asp	Leu 185	Ala	Gly	Leu	Ala	Ala 190	Leu	Gln	Glu	Leu	Asp 195
Val	Ser	Asn	Leu	Ser 200	Leu	Gln	Ala	Leu	Pro 205	Gly	Asp	Leu	Ser	Gly 210
Leu	Phe	Pro	Arg	Leu 215	Arg	Leu	Leu	Ala	Ala 220	Ala	Arg	Asn	Pro	Phe 225
Asn	Cys	Val	Cys	Pro 230	Leu	Ser	Trp	Phe	Gly 235	Pro	Trp	Val	Arg	Glu 240
Ser	His	Val	Thr	Leu 245	Ala	Ser	Pro	Glu	Glu 250	Thr	Arg	Cys	His	Phe 255
Pro	Pro	Lys	Asn	Ala 260	Gly	Arg	Leu	Leu	Leu 265	Glu	Leu	Asp	Tyr	Ala 270
Asp	Phe	Gly	Cys	Pro 275	Ala	Thr	Thr	Thr	Thr 280	Ala	Thr	Val	Pro	Thr 285
Thr	Arg	Pro	Val	Val 290	Arg	Glu	Pro	Thr	Ala 295	Leu	Ser	Ser	Ser	Leu 300
Ala	Pro	Thr	Trp	Leu 305	Ser	Pro	Thr	Ala	Pro 310	Ala	Thr	Glu	Ala	Pro 315
Ser	Pro	Pro	Ser	Thr 320	Ala	Pro	Pro	Thr	Val 325	Gly	Pro	Val	Pro	Gln 330
Pro	Gln	Asp	Cys	Pro 335	Pro	Ser	Thr	Cys	Leu 340	Asn	Gly	Gly	Thr	Cys 345
His	Leu	Gly	Thr	Arg 350	His	His	Leu	Ala	Cys 355	Leu	Cys	Pro	Glu	Gly 360
Phe	Thr	Gly	Leu	Tyr 365	Cys	Glu	Ser	Gln	Met 370	Gly	Gln	Gly	Thr	Arg 375
Pro	Ser	Pro	Thr	Pro 380	Val	Thr	Pro	Arg	Pro 385	Pro	Arg	Ser	Leu	Thr 390
Leu	Gly	Ile	Glu	Pro 395	Val	Ser	Pro	Thr	Ser 400	Leu	Arg	Val	Gly	Leu 405

Gln Arg Tyr Leu	Gln Gly Ser Ser Val	Gln Leu Arg Ser Leu Arg
410	415	420
Leu Thr Tyr Arg	Asn Leu Ser Gly Pro	Asp Lys Arg Leu Val Thr
425	430	435
Leu Arg Leu Pro	Ala Ser Leu Ala Glu Tyr Thr Val Thr Gln Leu	
440	445	450
Arg Pro Asn Ala	Thr Tyr Ser Val Cys Val Met Pro Leu Gly Pro	
455	460	465
Gly Arg Val Pro	Glu Gly Glu Glu Ala Cys Gly Glu Ala His Thr	
470	475	480
Pro Pro Ala Val	His Ser Asn His Ala Pro Val Thr Gln Ala Arg	
485	490	495
Glu Gly Asn Leu	Pro Leu Leu Ile Ala Pro Ala Leu Ala Ala Val	
500	505	510
Leu Leu Ala Ala	Leu Ala Ala Val Gly Ala Ala Tyr Cys Val Arg	
515	520	525
Arg Gly Arg Ala	Met Ala Ala Ala Ala Gln Asp Lys Gly Gln Val	
530	535	540
Gly Pro Gly Ala	Gly Pro Leu Glu Leu Glu Gly Val Lys Val Pro	
545	550	555
Leu Glu Pro Gly	Pro Lys Ala Thr Glu Gly Gly Gly Glu Ala Leu	
560	565	570
Pro Ser Gly Ser	Glu Cys Glu Val Pro Leu Met Gly Phe Pro Gly	
575	580	585
Pro Gly Leu Gln	Ser Pro Leu His Ala Lys Pro Tyr Ile	
590	595	

<210> 70

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 70

ccctccactg cccaccgac tg 22

<210> 71

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe



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 agcagcactc tgtcctgcac ctgggttcca ttaacgccac ctccaaggat 500  
 gactccgatg tgacagaggt gatgtggcaa ccagctctta ggcgtgggag 550  
 aggcctacag gccaaggat atgggtgtccg aatccaggat gctggagttt 600  
 atctgctgta tagccaggtc ctgtttcaag acgtgacttt caccatgggt 650  
 caggtgggtgt ctcgagaagg ccaaggaagg caggagactc tattccgatg 700  
 tataagaagt atgccctccc acccgaccg ggcctacaac agctgctata 750  
 gcgcaggtgt cttccattta caccaagggg atattctgag tgcataaatt 800  
 ccccgggcaa gggcgaaact taacctctct ccacatggaa ctttctggg 850  
 gtttgtgaaa ctgtgattgt gttataaaaa gtggctcca gcttgaaga 900  
 ccaggggtggg tacatactgg agacagccaa gagctgagta tataaaggag 950  
 aggggaatgtg caggaacaga ggcattcttc tgggtttggc tcccgttcc 1000  
 tcacttttcc cttttcattc ccaccccta gactttgatt ttacggatat 1050  
 cttgcttctg ttcccatgg agctccg 1077

<210> 76  
 <211> 250  
 <212> PRT  
 <213> Homo Sapien

<400> 76  
 Met Pro Ala Ser Ser Pro Phe Leu Leu Ala Pro Lys Gly Pro Pro  
 1 5 10 15  
 Gly Asn Met Gly Gly Pro Val Arg Glu Pro Ala Leu Ser Val Ala  
 20 25 30  
 Leu Trp Leu Ser Trp Gly Ala Ala Leu Gly Ala Val Ala Cys Ala  
 35 40 45  
 Met Ala Leu Leu Thr Gln Gln Thr Glu Leu Gln Ser Leu Arg Arg  
 50 55 60  
 Glu Val Ser Arg Leu Gln Gly Thr Gly Gly Pro Ser Gln Asn Gly  
 65 70 75  
 Glu Gly Tyr Pro Trp Gln Ser Leu Pro Glu Gln Ser Ser Asp Ala  
 80 85 90  
 Leu Glu Ala Trp Glu Asn Gly Glu Arg Ser Arg Lys Arg Arg Ala  
 95 100 105  
 Val Leu Thr Gln Lys Gln Lys Lys Gln His Ser Val Leu His Leu  
 110 115 120

Val	Pro	Ile	Asn	Ala	Thr	Ser	Lys	Asp	Asp	Ser	Asp	Val	Thr	Glu
			125						130					135
Val	Met	Trp	Gln	Pro	Ala	Leu	Arg	Arg	Gly	Arg	Gly	Leu	Gln	Ala
			140						145					150
Gln	Gly	Tyr	Gly	Val	Arg	Ile	Gln	Asp	Ala	Gly	Val	Tyr	Leu	Leu
			155						160					165
Tyr	Ser	Gln	Val	Leu	Phe	Gln	Asp	Val	Thr	Phe	Thr	Met	Gly	Gln
			170						175					180
Val	Val	Ser	Arg	Glu	Gly	Gln	Gly	Arg	Gln	Glu	Thr	Leu	Phe	Arg
			185						190					195
Cys	Ile	Arg	Ser	Met	Pro	Ser	His	Pro	Asp	Arg	Ala	Tyr	Asn	Ser
			200						205					210
Cys	Tyr	Ser	Ala	Gly	Val	Phe	His	Leu	His	Gln	Gly	Asp	Ile	Leu
			215						220					225
Ser	Val	Ile	Ile	Pro	Arg	Ala	Arg	Ala	Lys	Leu	Asn	Leu	Ser	Pro
			230						235					240
His	Gly	Thr	Phe	Leu	Gly	Phe	Val	Lys	Leu					
			245					250						

<210> 77  
 <211> 2849  
 <212> DNA  
 <213> Homo Sapien

<400> 77  
 cactttctcc ctctcttcc tttactttcga gaaaccgcgc ttccgcttct 50  
 ggtcgcagag acctcggaga ccgcgccggg gagacggagg tgctgtgggt 100  
 ggggggggacc tgtggctgct cgtaccgccc cccaccctcc tcttctgcac 150  
 tgccgtcctc cggaagacct tttccctgc tctgtttcct tcaccgagtc 200  
 tgtgcatcgc cccggacctg gccgggagga ggcttggccg gcgggagatg 250  
 ctctaggggc ggcgccggag gagcgcccg cgggacggag ggcccggcag 300  
 gaagatgggc tcccgtggac agggactctt gctggcgtag tgccctgctcc 350  
 ttgcctttgc ctctggcctg gtccctgagtc gtgtgcccc tgtccagggg 400  
 gaacagcagg agtgggaggg gactgaggag ctgccgtcgc ctccggacca 450  
 tgccgagagg gctgaagaac aacatgaaaa atacaggccc agtcaggacc 500  
 aggggctccc tgettcccg tgettgcgt gctgtgaccc cggtaacctcc 550  
 atgtaccgg cgaccgccgt gcccagatc aacatcacta tcttgaaagg 600  
 ggagaagggt gaccgcggag atcgaggcct ccaagggaaa tatggcaaaa 650







110	115	120
Ala Arg Gly His Thr Gly Pro Lys Gly Gln Lys Gly Ser Met Gly		
125	130	135
Ala Pro Gly Glu Arg Cys Lys Ser His Tyr Ala Ala Phe Ser Val		
140	145	150
Gly Arg Lys Lys Pro Met His Ser Asn His Tyr Tyr Gln Thr Val		
155	160	165
Ile Phe Asp Thr Glu Phe Val Asn Leu Tyr Asp His Phe Asn Met		
170	175	180
Phe Thr Gly Lys Phe Tyr Cys Tyr Val Pro Gly Leu Tyr Phe Phe		
185	190	195
Ser Leu Asn Val His Thr Trp Asn Gln Lys Glu Thr Tyr Leu His		
200	205	210
Ile Met Lys Asn Glu Glu Glu Val Val Ile Leu Phe Ala Gln Val		
215	220	225
Gly Asp Arg Ser Ile Met Gln Ser Gln Ser Leu Met Leu Glu Leu		
230	235	240
Arg Glu Gln Asp Gln Val Trp Val Arg Leu Tyr Lys Gly Glu Arg		
245	250	255
Glu Asn Ala Ile Phe Ser Glu Glu Leu Asp Thr Tyr Ile Thr Phe		
260	265	270
Ser Gly Tyr Leu Val Lys His Ala Thr Glu Pro		
275	280	

<210> 79  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 79  
 tacaggccca gtcaggacca gggg 24

<210> 80  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 80  
 ctgaagaagt agaggccggg cacg 24

<210> 81

<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 81  
cccgggtgctt gcgctgctgt gacccccgga cctccatgta cccgg 45

<210> 82  
<211> 2284  
<212> DNA  
<213> Homo Sapien

<400> 82  
gcggagcatc cgctgcggtc ctgcgcgaga cccccgcgcg gattcgccgg 50  
tccttccccgc gggcgcgaca gagctgtcct cgcacctgga tggcagcagg 100  
ggcgcggggg tcctctcgac gccagagaga aatctcatca tctgtgcagc 150  
cttcttaaag caaactaaga ccagagggag gattatcctt gacctttgaa 200  
gacaaaaact aaactgaaat ttaaaatggt cttcggggga gaaggagct 250  
tgacttacac tttggtaata atttgcttcc tgacactaag gctgtctgct 300  
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gtcatctctt tctaaggga tcaagaggcaa tgagcccgtata tacttcaa 400  
ctcaagaaga ctgcattaat tcttgctggt caacaaaaaa catatcaggg 450  
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acccaactgc tactatctt tctgtcccaa cgaggaagcc tgtccattga 550  
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cttcccagcc acagctggcc accacagctc cactgtaac cactgtcact 1050





100E30" 64444550

305	310	315
Ser Leu Glu Thr Ile Pro Phe Thr Glu	Ile Ser Asn Leu Thr Leu	
320	325	330
Asn Thr Gly Asn Val Tyr Asn Pro Thr	Ala Leu Ser Met Ser Asn	
335	340	345
Val Glu Ser Ser Thr Met Asn Lys Thr	Ala Ser Trp Glu Gly Arg	
350	355	360
Glu Ala Ser Pro Gly Ser Ser Ser Gln	Gly Ser Val Pro Glu Asn	
365	370	375
Gln Tyr Gly Leu Pro Phe Glu Lys Trp	Leu Leu Ile Gly Ser Leu	
380	385	390
Leu Phe Gly Val Leu Phe Leu Val Ile	Gly Leu Val Leu Leu Gly	
395	400	405
Arg Ile Leu Ser Glu Ser Leu Arg Arg	Lys Arg Tyr Ser Arg Leu	
410	415	420
Asp Tyr Leu Ile Asn Gly Ile Tyr Val	Asp Ile	
425	430	

<210> 84  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 84  
 agggaggatt atccttgacc tttgaagacc 30

<210> 85  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 85  
 gaagcaagtg cccagctc 18

<210> 86  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 86  
 cgggtccctg ctctttgg 18

<210> 87  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 87  
 caccgtagct gggagcgcac tcac 24

<210> 88  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 88  
 agtgaagtc aagctccc 18

<210> 89  
 <211> 49  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 89  
 gcttcctgac actaaggctg tctgctagtc agaattgcct caaaaagag 49

<210> 90  
 <211> 957  
 <212> DNA  
 <213> Homo Sapien

<400> 90  
 cctggaagat gcgcccattg gctgggtggcc tgctcaaggt ggtgttcgtg 50  
 gtcttcgcct ccttgtgtgc ctggtattcg gggtagctgc tcgcagagct 100  
 cattccagat gcacccctgt ccagtgtgtc ctatagcatc cgcagcatcg 150  
 gggagaggcc tgtcctcaaa gctccagtc ccaaaaggca aaaatgtgac 200  
 cactggactc cctgcccatac tgacacctat gcctacaggt tactcagcgg 250  
 aggtggcaga agcaagtacg ccaaaatctg ctttgaggat aacctactta 300  
 tgggagaaca gctgggaaat gttgccagag gaataaacat tgccattgtc 350  
 aactatgtaa ctgggaatgt gacagcaaca cgatgttttg atatgtatga 400  
 aggcgataac tctggaccga tgacaaagtt tattcagagt gctgctccaa 450  
 aatccctgct cttcatggtg acctatgacg acggaagcac aagactgaat 500



aacgatgccca agaatgccat agaagcactt ggaagtaaag aaatcaggaa 550  
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 tcccttccga aattcagaga gaaaagatca accactctga tgctaagaac 650  
 aacagatatt ctggctggcc tgcagagatc cagatagaag gctgcatacc 700  
 caaagaacga agctgacact gcagggctct gagtaaagt gttctgtata 750  
 aacaaatgca gctggaatcg ctcaagaatc ttatTTTTct aaatccaaca 800  
 gcccatattt gatgagtatt ttgggtttgt tgtaaaccac tgaacatttg 850  
 ctagttgtat caaatcttgg tacgcagtat ttttatacca gtattttatg 900  
 tagtgaagat gtcaattagc aggaaactaa aatgaatgga aattcttaaa 950  
 aaaaaaa 957

<210> 91  
 <211> 235  
 <212> PRT  
 <213> Homo Sapien

<400> 91  
 Met Arg Pro Leu Ala Gly Gly Leu Leu Lys Val Val Phe Val Val  
 1 5 10 15  
 Phe Ala Ser Leu Cys Ala Trp Tyr Ser Gly Tyr Leu Leu Ala Glu  
 20 25 30  
 Leu Ile Pro Asp Ala Pro Leu Ser Ser Ala Ala Tyr Ser Ile Arg  
 35 40 45  
 Ser Ile Gly Glu Arg Pro Val Leu Lys Ala Pro Val Pro Lys Arg  
 50 55 60  
 Gln Lys Cys Asp His Trp Thr Pro Cys Pro Ser Asp Thr Tyr Ala  
 65 70 75  
 Tyr Arg Leu Leu Ser Gly Gly Gly Arg Ser Lys Tyr Ala Lys Ile  
 80 85 90  
 Cys Phe Glu Asp Asn Leu Leu Met Gly Glu Gln Leu Gly Asn Val  
 95 100 105  
 Ala Arg Gly Ile Asn Ile Ala Ile Val Asn Tyr Val Thr Gly Asn  
 110 115 120  
 Val Thr Ala Thr Arg Cys Phe Asp Met Tyr Glu Gly Asp Asn Ser  
 125 130 135  
 Gly Pro Met Thr Lys Phe Ile Gln Ser Ala Ala Pro Lys Ser Leu  
 140 145 150  
 Leu Phe Met Val Thr Tyr Asp Asp Gly Ser Thr Arg Leu Asn Asn  
 155 160 165

Asp	Ala	Lys	Asn	Ala	Ile	Glu	Ala	Leu	Gly	Ser	Lys	Glu	Ile	Arg
			170						175					180
Asn	Met	Lys	Phe	Arg	Ser	Ser	Trp	Val	Phe	Ile	Ala	Ala	Lys	Gly
			185						190					195
Leu	Glu	Leu	Pro	Ser	Glu	Ile	Gln	Arg	Glu	Lys	Ile	Asn	His	Ser
			200						205					210
Asp	Ala	Lys	Asn	Asn	Arg	Tyr	Ser	Gly	Trp	Pro	Ala	Glu	Ile	Gln
			215						220					225
Ile	Glu	Gly	Cys	Ile	Pro	Lys	Glu	Arg	Ser					
			230						235					

<210> 92  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 92  
 aatgtgacca ctggactccc 20

<210> 93  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 93  
 aggcttgga ctccttc 18

<210> 94  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 94  
 aagattcttg agcgattcca gctg 24

<210> 95  
 <211> 47  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 95  
 aatccctgct cttcatggtg acctatgacg acggaagcac aagactg 47

<210> 96  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
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 <400> 96  
 ctcaagaagc acgcgtactg c 21  
  
 <210> 97  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 97  
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 <210> 98  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 98  
 catccaggct cgccactg 18  
  
 <210> 99  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 99  
 tggcaaggaa tgggaacagt 20  
  
 <210> 100  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 100  
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 <210> 101  
 <211> 19  
 <212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 101

gggcagaaat ccagccact 19

<210> 102

<211> 18

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

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cccttcgcct gcttttga 18

<210> 103

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

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